

UNDERSTORY MANAGEMENT

PRESENTED BY :

STEVE LOUIS, OAKWOOD FRUIT FARM, RICHLAND CENTER, WI



INTRODUCTION:

- Grew up on Family owned Apple Orchard/ Dairy Farm in SW Wisconsin
- 180 Acres of apples, 25 varieties
- Mix of semi-dwarf and dwarf rootstock
- 4th generation, family operated for 115 years
- Graduated from UW-Madison in 1993 with degrees in Horticulture and Dairy Science

UNDERSTORY MANAGEMENT

- Eliminate potential home for pests; insect and rodents
- Reduce competition from grass and weeds, major issue in first few years of trees
 - Water
 - Nutrients
 - Can be a major problem at picking time
 - Vines shading apples in tree, getting in pickers way
 - Making it difficult for pickers to walk under trees while picking

UNDERSTORY MANAGEMENT

- Two different approaches with different age and size trees



YOUNG TREES

- Newly planted trees
 - Need to push very hard to fill space in quickly
 - Keep weed pressure as low as possible
 - Be very careful with herbicides, can be very sensitive
 - We no longer use any Roundup at all on dwarf trees of any age
 - Another reason we like tree guards or paint trunks
 - Plant trees and put herbicide on as soon as possible



YOUNG TREES

- We use Prowl H2o plus Forfeit 280 or Rely 280

MATURE TREES

- Can be more tolerant of some competition
- Depends on type and timing of weeds
- A little easier on semi-dwarf because they will shade out more of the ground
- As trees mature weed types can change; can become more woody types



MATURE TREES

- Apply pre-emergent in fall
- Like this time because ground is usually firmer and not as busy
- Usually have to come back once or twice more during the growing season
- Scout and apply targeted herbicide only when we see weeds and have identified what is coming in
- Late summer or early fall they can get away from you; easy to get busy with other things
 - Watch out because this is when it can become an issue for picking

Tall weeds can shade fruit in bottom
of tree

Makes it a lot harder for pickers to
work



Much nicer to pick in this

Especially important in dwarf trees



THE PROBLEMS

WE HAVE TWO MAJOR PESTS:

Bindweed

Thistle

BINDWEED

Big problem in young trees

It will completely cover the tree in a short time

quickly shading out the entire tree

It will creep in from the drive row



BINDWEED

In mature trees it can quickly take over parts of the tree and shade fruit

Also makes picking difficult

Can be difficult to control if growing tip is already up into the tree



THISTLE

Can be several different types

Poses a different challenge



THISTLE

Must control early

If they grow too much and then are killed still a big problem at picking time



www.alamy.com - H80KHC

CHANGING TIMES

- We are quickly changing our thoughts on herbicide use
 - Still important; but can we use less
 - What times of the season are most important

NO MORE BURN AND
BARE ALL YEAR



NOT GOOD FOR SOIL
HEALTH
PROBLEMS WITH
EROSION



CHANGING TO SMALLER HERBICIDE STRIP

Too wide, we do not need it beyond
the drip line of tree



BETTER WAY

Much narrower herbicide strip

No longer worried about a little competition from low growing plants



BETTER WAY

Ok if low-growing late season plants



NEW IDEAS

- Start Mulching:
 - Advantages:
 - Weed control
 - Conserve Moisture
 - Disadvantages:
 - Cost
 - Labor
 - Availability
 - Rodents
 - Worry about graft union getting buried
 - If we leave it up, will we sacrifice growth



NEW IDEAS

- Mow and blow: side discharge mowers
- Blows clippings back under trees
 - Advantages:
 - Save labor; already mowing
 - Soil health, add organic matter
 - Disadvantages:
 - ?



MOW AND BLOW

Really excited to start to
experiment with this



FERTILITY: A STORY OF TWO PROGRAMS

YOUNG TREES

- Aggressively growing to fill in space as soon as possible



MATURE TREES

- Slow down growth, fruit and maintain health of tree



FERTILITY

Young Trees:

- Push young trees hard to fill space in as soon as possible
- Goal is by end of second year to top wire
- Finish filling in space in third year if needed
- Start slowing down fertilizer; like an iceberg, just keeps pushing on
 - Don't want excess nitrogen when you start cropping, leads to poor color and poor quality fruit

FERTILITY

Almost to top wire

But may need to fill in space

May need one more year but pull
back fertilizer



FERTILITY

Apply several types of fertilizer

ground: many types

we like Ca Nitrate and

Topwire (liquid)

Foliar

Over several applications



FERTILITY

- Mature trees:
 - Slow down the growth
 - Supply just what they need to support a full crop and stay healthy



FERTILITY

Soil testing

Tissues testing: a couple times a year

can start to see trends

Watch the micro nutrients



CONCLUSION:

TWO DIFFERENT STRATEGIES

- Mature vs Young
 - Don't over use either one: herbicide or nutrients
- Times are changing
 - Consider tree health and soil health
 - Consider environment